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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,058	12/20/2001	Frank S. Geefay	10010586-1	2950

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AGILENT TECHNOLOGIES, INC.
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EXAMINER

CRUZ, LOURDES C

ART UNIT PAPER NUMBER

2827

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,058

Applicant(s)

GEEFAY ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 09 April 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 12,13,20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hyoudo et al. (US6285067).

Hyoudo et al. discloses (see cover figure) a wafer-level package, comprising:

A first wafer 31 and a second wafer 21;

A gasket 23 formed from the first wafer;

A pad (portion of 21 covered by 23) substantially matching the gasket; and

Bonding material 51 joining the gasket and the pad

Hyoudo also discloses:

- Non conductive bonding material (Col. 3, lines 10+), the non-conductive material being a glass
- A substrate made of silicon (Col 5, lines 5+)

Claims 12,13,20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hatanaka (US 6229404).

Hatanaka discloses a wafer level package, comprising (see cover figure):

A first wafer 2 and a second wafer 3;

a gasket 8 formed from the first wafer (for the purpose of this rejection "from" means formed from 3's whereabouts in the device)

a pad on the second wafer (unlabeled solder balls) substantially matching the gasket; and bonding material 31 (left) joining gasket and pad.

- First wafer is inherently formed of silicon
- Bonding material is conductive
- See that non-conductive material surrounds the conductive bonding material

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-19, 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatanaka.

The specific dimensions recited in the claims do not cause any critical or unexpected results to the device's operation. Rather it is merely an obvious design

choice determined by routine experimentation. In *Aller*, the court stated "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456 105 USPQ 233,235 (CCPA 1995). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a gasket of the specific dimensions in order to provide sufficient attachment area that will keep a seal between wafers.

See that Hatanaka teaches:

- Bonding material that is conductive
- See that non-conductive bonding material – glass-- surrounds the conductive bonding material

However, see that Hatanaka fails to specifically disclose the material of bonding material 31. See Col. 15, lines 55+, wherein Hatanaka discloses gold being used for bumps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form elements 31 out of gold since gold is known for its good conductive properties, and since making elements 31 out of gold will prevent void effect due to a difference in diffusion velocity from happening whereby connection strength would be reduced if other materials were to be used.

Response to Arguments

Applicant's arguments filed 04/09/2003 have been fully considered but they are not persuasive. Applicant argues that:

- Hatanaka and Hyoudo fail to teach a gasket "formed by etching away parts of the wafer to leave only material in the shape of a gasket"
- The prior art's "gaskets" does not anticipate the claimed invention because the present gasket "is stronger" and "the gasket surface is flatter"
- Applicant also argues that Hyoudo neither teaches nor suggests that the sides "of the packages are formed by removing portions of the cover"
- Additionally, Applicant argues that Hatanaka does not teach that the ceramic insulating layers are formed from the material of the crystal oscillator or IC chip

The above arguments are **not persuasive** because:

- See In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, **all of which make it clear that** it is the patentability of **the final product** per se which must be determined, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product,

whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

- For the reasons above, the examiner has given no weight to the new limitations which are directed to "product by process" limitations and, for the reasons provided above, they therefore do not distinguish the present invention from that disclosed by the prior art of record. Also, the arguments stating that the prior art does not use the same method or process of making the present apparatus **are not** persuasive for the reasons provided above. The patentability of the apparatus is what is being pursued in the present application, and the prior art shows every single claimed structural limitation (see body of the rejection above).
- See that no degree of strength or "flatness" is recited in the claims. In response to applicant's argument that the references fail to show these features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

- Regarding the argument that Hatanaka does not teach that the ceramic insulating layers are formed **from** the material of the crystal oscillator or IC chip, the examiner is puzzled by this argument. Is Applicant referring to the bonding material? Which ceramic layers? The examiner assumes so for the purpose of this Office Action, and replies that a single IC/crystal oscillator is not claimed. Also, see that glass surrounds the conductive bonding material of Hatanaka also see that the examiner clearly pointed out that non-conductive and conductive material were present. See above quote of *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). The above new grounds of rejection are due to the amendments to the claims.

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elle Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 10-6:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Elle Cruz
August 15, 2003

Lourdes C. Cruz
Examiner
Art Unit 2827



John B. Vigushin
Primary Examiner
Gau 2827